

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 12

REMARKS

In the Office Action, the Examiner set forth a requirement for election of species.

Specifically, the Examiner identified eight apparent species as set forth below.

- I: A first and second light source creating white light;
- II: A single LED emitter having a phosphorescent or fluorescent coating which creates white light;
- III: A semiconductor, heat extraction member, leadframe, phosphorescent coating, and semiconductor optical radiation member encapsulated in a covering;
- IV: A first light source combined with a photoluminescent light to form white light;
- V: An LEP and a second light source to create a white light;
- VI: An OLED and a second light source to create white light;
- VII: A first EL light source, a second EL light source, and a third photoluminescent light source combined to create white light; and
- VIII: An LED chip enclosed in a polymer matrix enclosure and a narrowband emitter carried on an LED leadframe.

The Examiner indicated that no claims were generic. It is noted that the Examiner did not identify which of the claims correspond to which of the identified species.

Applicants hereby elect the first identified species (I) corresponding to a first and second light source creating white light, with traverse.

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 13

Applicants submit that the elected species I should not properly be considered a “species” insofar as it is generic as to the other identified species. Although the Examiner did not specifically identify which claims correspond to which of the species, it is apparent that at least independent claims 1 and 10 correspond to the first species. As evidenced by the many dependent claims, independent claim 1 is essentially generic to each of the other “species” identified in the application. Specifically, claim 4 recites that the second light source may be a photoluminescent source. Claim 4 thus corresponds to species IV identified above.

Claims 6 and 7 recite that the light emitting assembly of claim 1 further includes a leadframe and an encapsulant where the first light source is a semiconductor optical radiation emitter and is mounted on the leadframe and encapsulated by the encapsulant, and wherein the leadframe includes a heat extraction member and a plurality of electrical leads. Claims 6 and 7 thus correspond to independent claim 35 and species III identified above.

New claim 104, which depends from claim 1, recites that the light emitting assembly further includes an optical element spaced apart from the first light source wherein the second light source is phosphorescent or fluorescent dye or pigment disposed on or within the optical element. Claim 104 thus corresponds to species II.

New claim 105, which depends from claim 1, recites that the first light source is an LEP, which corresponds to species V. New claim 106, which also depends from claim 1, recites that the first light source is an OLED, which corresponds to species VII.

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 14

New claim 111, which depends from claim 1, recites that the light emitting assembly is a discrete light emitting diode component comprising a leadframe and a polymer matrix enclosure wherein the first light source is an LED chip disposed on the leadframe and the second light source is a narrow band light emitter carried on the leadframe. Claim 111 thus corresponds to species VIII.

New claim 112, which depends from claim 1, recites that the assembly further comprises a photoluminescent light source, wherein the first light source is a first electroluminescent light source and the second light source is a second electroluminescent light source. New claim 112 thus corresponds to species VII.

Accordingly, each of the species II-VIII is presented in a dependent claim that depends from independent claim 1.

To the extent that the Examiner should subsequently determine the entire species I is generic to the other species, Applicants elect species IV. In this regard, it should be noted that species IV, which appears to correspond to independent claim 44, is also generic to several of the identified "species." Specifically, claim 56, which depends indirectly from claim 44, recites that the semiconductor radiation source is an OLED, which corresponds to species VI.

Claim 57, which also depends indirectly on claim 44, recites that the semiconductor radiation source is an LEP. Claim 57 thus corresponds to species V.

New claim 115, which depends from claim 44, recites that the assembly further comprises a leadframe including electrical leads and a heat extraction member and an encapsulant

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 15

covering the first light source and portions of the electrical leads and the heat extraction member.

Claim 115 thus corresponds to species III.

New claim 116, which also depends from claim 44, recites that the assembly further comprises an optical element spaced apart from the first light source and wherein the photoluminescent second light source is a phosphorescent or fluorescent dye or pigment disposed on or within the optical element. Accordingly, claim 116 corresponds to species II.

New claim 117, which also depends from claim 44, recites that the light emitting assembly is a discrete light emitting diode component comprising a leadframe and a polymer matrix enclosure wherein the first light source is an LED chip disposed on the leadframe and enclosed within the enclosure, and the photoluminescent second light source is a narrow band light emitter carried on the leadframe. Accordingly, claim 117 corresponds to species VIII.

As evidenced by the above-noted dependent claims that depend from claim 44, claim 44 is generic to many of the other identified "species." To the extent that the Examiner may consider both species I and IV to be generic, Applicants hereby elect species VIII.

Applicants submit that the identification of the various "species" is improper insofar as these "species" are not, in fact, species that may be properly restricted from one another.

MPEP §804.04(f) sets forth the requirements for making a proper restriction based on species.

Specifically, MPEP §804.04(f) states:

Claims to be restricted to different species *must be mutually exclusive*. The general test as to when claims are restricted, respectively, to different species is the fact that one claim recites limitations which under the disclosure are found in a first species but not in a second, while a second claim recites limitations

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 16

disclosed only for the second species and not the first. This is frequently expressed by saying that the claims to be restricted to different species, must recite the mutually exclusive characteristics of such species. [Emphasis added]

The "species" identified by the Examiner do not represent mutually exclusive characteristics of the disclosed invention. This is clearly evidenced by the presence of the various dependent claims that represent the different species and depend from one another. For example, species I, which is directed to a first light source and a second light source whose light mixes to form white light, does not represent characteristics that are mutually exclusive from any of the other species. In fact, all of the other species include first and second light sources as broadly defined in the application. The only difference between species I and IV, for example, is that species IV recites that the second light source is photoluminescent. Species I does not exclude the second light source from being photoluminescent. In fact, dependent claim 4 specifically recites that the second light source is photoluminescent. Likewise, the first light source may be either an LEP or OLED. Similarly, both the first and second light sources may be electroluminescent light sources and the device may further include a photoluminescent light source. In all of these species, at least the first light source may be provided on a leadframe and encapsulated by an encapsulant. Such structure may further include a heat extraction member. Such a structure may be used with the second light source also provided on the leadframe or on a separate optical element spaced apart from the assembly including the first light source. Because many of the "species" refer to characteristics that may be used in

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 17

combination with one another, they clearly are not “mutually exclusive” as required by MPEP §804.04(f) for a proper restriction based upon species.

For the reasons stated above, Applicants submit that the restriction based on species is improper and should be withdrawn. Applicants further submit that species I is actually generic to the other “species” and that species IV is also generic to many of the other “species.” Accordingly, at a minimum, species I and IV should be examined with species VIII, which is the species that Applicants elect in the event that the Examiner agrees that species I and IV are generic to species VIII. In any event, Applicants wish to elect whatever species includes at least claim 1.

By this Amendment, Applicants have canceled claims 10, 71, 74-79, and 86-88 without prejudice and have amended claims 1, 11-18, 25, 44, 51, 69, 70, 72, and 99 to more clearly define the present invention. Most of the amendments to these claims are made to correct typographical errors and do not narrow the scope of the claims. Applicants have also added new claims 104-118 to recite additional features of the present invention.

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached page is captioned “Version With Markings to Show Changes Made.”

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 18

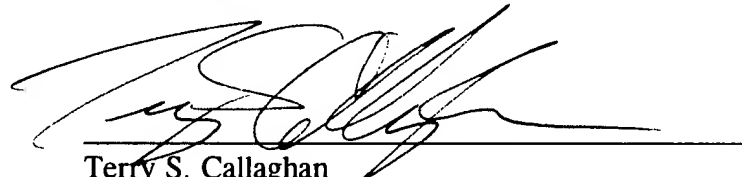
In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. A notification to that effect is respectfully solicited.

Respectfully submitted,

JOHN K. ROBERTS ET AL.

By: Price, Heneveld, Cooper,
DeWitt & Litton

1-3-2001
Date


Terry S. Callaghan
Registration No. 34 559
695 Kenmoor, S.E./Post Office Box 2567
Grand Rapids, MI 49501
(616) 949-9610

TSC/rsw

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 19



VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please amend claims 1, 11-18, 25, 44, 51, 69, and 70 as follows:

1. (Amended) A light emitting assembly comprising:

a solid state first light source emitting light having a dominant wavelength less than about 530 nm when a DC potential is applied thereto; and

a second light source,

wherein said first and second light sources oriented such that when said first and second light sources emit light, light projected from said first and second light sources overlaps and is capable of forming effective white light, wherein ~~neither of said first and second light sources projects light having a red hue~~ dominant wavelength less than about 635 nm, and wherein the light projected from said first light source exhibits color coordinates different from the light projected from said second light source.

11. (Amended) ~~The~~ A light emitting assembly of claim 10 comprising a first solid state light source and a second light source, said light sources oriented such that when said first and second light sources emit light, light projected from said first and second light sources overlaps and is capable of forming effective white light, wherein said first light source projects

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 20

light having a blue hue, and wherein said second light source projects light having a hue other than blue, wherein said first light source is includes an LED junction.

12. (Amended) The light emitting assembly of claim ~~10~~11, wherein said second light emitting source is a phosphorescent or fluorescent dye or pigment.

13. (Amended) The light emitting assembly of claim ~~10~~12, wherein said phosphorescent or fluorescent dye or pigment being disposed so as to be irradiated with light from said first light source.

14. (Amended) The light emitting assembly of claim ~~10~~12 and further comprising an optical element spaced apart from said first light source, said phosphorescent or fluorescent dye or pigment being disposed on or within said optical element.

15. (Amended) The light emitting assembly ~~according to~~of claim ~~10~~11 and further including a leadframe and an encapsulant, where said first light source ~~is a semiconductor optical radiation emitter and~~ is mounted on said leadframe and encapsulated by said encapsulant.

16. (Amended) The light emitting assembly ~~according to~~of claim 15 wherein said leadframe includes a heat extraction member and a plurality of electrical leads, said heat extraction

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 21

member providing a thermal path from said ~~semiconductor optical radiation emitter~~first light source having a lower thermal resistance than a thermal path provided by said electrical leads.

17. (Amended) The light emitting assembly ~~according to~~ claim 16, where said second light source is a semiconductor optical radiation emitter and is mounted on said leadframe and encapsulated by said encapsulant.

18. (Amended) The light emitting assembly ~~according to~~ claim 16, where said second light source is a fluorescent dye or phosphor.

25. (Amended) A white light emitting device comprising:

a source of radiation having a ~~dominant peak~~ wavelength equal to or less than about 550 nm; and

an optical element mounted in spaced relation from said radiation source to receive the radiation emitted from said radiation source,

where said optical element includes a fluorescent dye or phosphor that is responsive to the radiation received from said radiation source to generate and emit light,

where the light emitted from said device is substantially white light.

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 22

44. (Amended) A light emitting assembly comprising:

a first light source emitting light having a dominant wavelength less than about 530 nm; and

a photoluminescent second light source excited by a semiconductor radiation source that emits radiation when a DC potential is applied thereto,

wherein said first and second light sources are oriented such that when said first and second light sources emit light, light projected from said first and second light sources overlaps and is capable of forming effective white light, wherein the light projected from said first light source exhibits color coordinates different from the light projected from said second light source.

51. (Amended) The light emitting assembly of claim 44 and further including an encapsulant disposed over said first light source, said photoluminescent second light source disposed on or within said encapsulant.

69. (Amended) A light emitting assembly comprising:

a first light source including an OLED; and

a second light source,

wherein said first and second light sources are oriented such that when said first and second light sources emit light, light projected from said first and second light sources overlaps and is capable of forming effective white light, wherein the light projected from said

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 23

first light source exhibits color coordinates different from the light projected from said second light source.

70. (Amended) The light emitting assembly of claim ~~67~~69, wherein said second light source includes a OLED.

72. (Amended) ~~A~~The light emitting device of claim 71 comprising first, second, and third light emitting sources oriented such that when said first, second, and third light sources are energized, light emitted from said first, second, and third light sources overlaps and is capable of forming effective white light, wherein the light emitted from said first light source exhibits color coordinates different from the light emitted from said second and third light sources, the light emitted from said second light source exhibits color coordinates different from the light emitted from said third light source, and wherein at least one of said light emitting sources is a photoluminescent source, wherein at least one of said light emitting sources is an electroluminescent device.

99. (Amended) A discrete light emitting diode component comprising:

a leadframe;

a polymer matrix enclosure;

an LED chip emitting light having a first hue, said LED chip is disposed on said leadframe and enclosed within said enclosure; and

Applicant : John K. Roberts et al.
Appln. No. : 09/723,675
Page : 24

a narrow band light emitter ~~carried on said leadframe and~~ emitting light of a hue different than emissions from said LED chip, said LED chip and said narrow band emitter are disposed such that, when said LED chip and said narrow band emitter emit light, emissions from said LED chip overlap and mix with emissions from said narrow band emitter to form metameric white light.